

FEB 21 1964

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YALE PEABODY MUSEUM
OF NATURAL HISTORY

Number 77

November 11, 1963

New Haven, Conn.

A NEW PEREGRINE FALCON
FROM THE CAPE VERDE ISLANDS,
EASTERN ATLANTIC OCEAN

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In the course of preparing a survey paper on the peregrine falcons, *Falco peregrinus*, of Eurasia and North Africa, we had occasion to examine three falcons taken in Cape Verde Islands a number of years ago by the "Blossom" Expedition of the Cleveland Museum of Natural History. On the basis of these same specimens, the peregrine was recorded as a migrant on the Cape Verde Islands by Bourne (1955) who also saw "large hawks . . . around the rocks of S. Thiego" and suggested that "the species may breed." More recently, Abbé René de Naurois saw peregrines nesting on Cima, one of the Rhombos Islets between Raza and Fogo (pers. comm. 1963). We thank both these authorities for their assistance.

The Cape Verde specimens are as large as *F. p. peregrinus* and *F. p. calidus* of the northern Palearctic, but they differ radically from these two subspecies in showing a strong rufous wash on the head, mantle and underparts as in some specimens of the smaller Mediterranean race, *brookiei*, and all specimens

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of the North African desert subspecies, *pelegrinoides*. We, therefore, describe the Cape Verde breeding population of the peregrine falcon as:

***Falco peregrinus madens*, subsp. nov.**

TYPE: Adult ♀ (Y.P.M. 44551), collected at Provocão, Brava, Cape Verde Islands, in 1924, by John da Lomba and Robert H. Rockwell on the "Blossom" Expedition.

DIAGNOSIS: The adult female differs from typical European *Falco p. peregrinus* in being much more brownish and saturated, with the crown and nape feathers strongly tinged with brown and rufous producing an irregular rufous nuchal collar. The brownish shading extends down onto the mantle but disappears on the lower back and rump which are grey as in *peregrinus*. The black "moustaches" are edged rufous and the light cheek patches are suffused with the same color. The general appearance is of a tawny wash or suffusion throughout the underparts including the flanks and thighs but not the lower abdomen and vent which are isabelline.

The adult male also differs from *peregrinus* in having the crown, nape and mantle washed with brown and rufous to produce a distinct rufous nuchal collar. Below, there are traces of rufous wash on the black edges of the "moustaches" and the underparts are suffused throughout with dull pinkish buff. The immature female has a pronounced rufous nuchal patch and rufous edging to the feathers of the anterior part of the crown. It is heavily streaked below and roughly similar in tone of color to immature specimens of *brookei* although the rufous wash on the brownish black "moustaches" is striking.

This population differs from the migrant tundra form, *calidus*, in being darker, blackish brown, not grey or slaty on the upperparts, and in being washed with rufous on the head and cheeks and isabelline or pinkish buff on the remainder of the underparts.

Compared with the darkest specimens of the smaller Mediterranean subspecies, *brookei*, the two adult birds are as dark or even darker on the upperparts, less slaty, more blackish, with the dark shade extending further down the back. There is a

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much more pronounced rufous wash over the head, nape, cheeks and underparts, but the dark spots and barring are somewhat reduced below.

From *pelegrinoides*, which it resembles in having a rufous wash about the head, *madens* differs by being larger and altogether darker, more blackish above, and more heavily washed with darker buff below. The spotting on the underparts is heavier, especially in the male.

MEASUREMENTS:	Wing (mm)	Tail (mm)	Culmen (mm)
YPM 44551 (Type) ad. ♀	340	156	54.5
YPM 44553 (paratype) ad. ♂	320	151	60.0
YPM 44552 (paratype) juv. ♀	315	152	54.5

RANGE: Cape Verde Islands; recorded so far on Brava, São Thiago, and Cima islands.

REMARKS: The adult female is in freshly molted definitive basic plumage; the male collected on São Thiago April 22, 1924, was undergoing prebasic molt (primary 4 completing regrowth); and the young bird, collected on Brava, date unknown, was just beginning first prebasic molt (primary 5 lost, scattered first basic feathers on throat, upper breast and mantle).

The Cape Verde peregrine population continues a north to south cline of increasingly darker coloration from *calidus* through *peregrinus* to *brookiei*. It shows in the rufous wash of the head and underparts an approach to the paler Canary Island and North African desert peregrine, *F. p. pelegrinoides*. A male identified as *pelegrinoides* (No. 537300 in the American Museum of Natural History) which had been kept at Tring, England for five years, but which was said to have come from Morocco (Hartert, 1915), is as dark as the male from the Cape Verde Islands, although the black on the mantle does not extend so far down the back. Below, this captive bird is even darker, providing a good example of the well-known tendency of individual peregrines to molt into darker or lighter plumage in response to altered diet and environment.

F. p. pelegrinoides and the desert peregrine of Asia, *F. p. babylonicus*, have recently been separated from the forest and

tundra peregrines as a distinct species by Vaurie (1961) and Dementiew and Iljitschew (1961). The existence of populations intermediate in color, such as this from the Cape Verde Islands and another in North Africa ("*punicus*" see Kleinschmidt, 1912-1927, p. 95-96), and records of cross-mated pairs producing young in India (Dodsworth, 1913), however, induce us to retain all the peregrines in one cosmopolitan species. We shall discuss further the significance of intermediate specimens in another paper.

The long wing measurement of the Cape Verde Island population is unexpected, since there is a distinct north to south cline of decreasing wing length in the continental populations from northern Europe to Africa. It is possible, however, that a large predator nesting in the cliffs of a small oceanic island would need to forage at a distance so that a mutation for long wings would be at a selective advantage in a small population. Furthermore, the cold Canary Current from the north and local upwelling result in a climate remarkably temperate for the tropics, especially in summer (Murphy, 1924). If Bergmann's rule which appears to be valid in this species is related to temperature, the low summer temperature of the Cape Verde Islands may help account for the longer-winged peregrine.

The subspecific name is derived from the present participle of the Latin verb *madeo* and refers to the "saturated" plumage of the Cape Verde Island peregrine.

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